Small Business Innovation Research/Small Business Tech Transfer

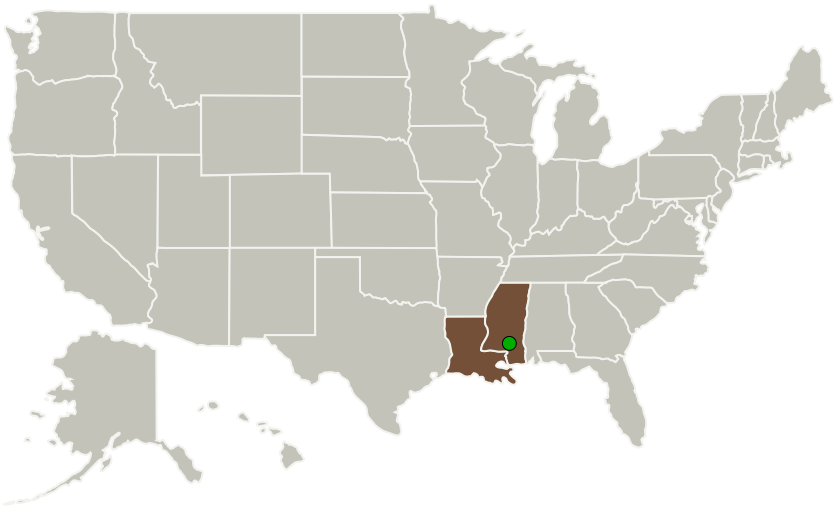
Cloud-Based Open Data Environment and Flow-based Aggregation Science Tool (CODEFAST), Phase I

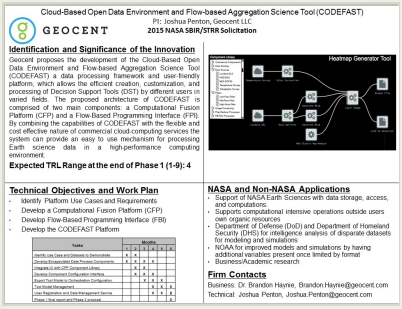
Completed Technology Project (2015 - 2015)

Project Introduction

The ability to utilize the vast amounts of remote sensing data such as Earth observations currently requires significant efforts by experts in multiple domains. Further hindering the utilization of related information is the computational resources required to effectively store, access, and process the data. However, by utilizing the ever-increasing power of cloud computing, recent advances in computational fusion mechanisms, and emerging programming paradigms government agencies and the public at large can efficiently generate tools which utilize this data resulting in an increased return on investment. Geocent proposes the development of the Cloud-Based Open Data Environment and Flow-based Aggregation Science Tool (CODEFAST) a data processing framework and user-friendly platform, which will allow the efficient creation, customization, and processing of Decision Support Tools (DST) by different users in varied fields. The proposed architecture of CODEFAST is comprised of two main components: a Computational Fusion Platform (CFP) and a Flow-Based Programming Interface (FPI). By combining the capabilities of CODEFAST with the flexible and cost effective nature of commercial cloud-computing services the system can provide an easy to use mechanism for processing Earth science data in a high-performance computing environment.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
Geocent, LLC	Lead Organization	Industry	Metairie, Louisiana
Stennis Space Center(SSC)	Supporting Organization	NASA Center	Stennis Space Center, Mississippi

Primary U.S. Work Locations	
Louisiana	Mississippi

Project Transitions

June 2015: Project Start

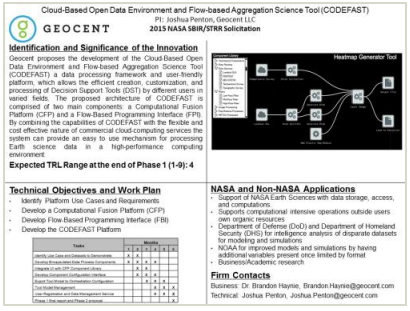
December 2015: Closed out

Closeout Summary: Cloud-Based Open Data Environment and Flow-based Aggregation Science Tool (CODEFAST), Phase I Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/138866)*

Images



Briefing Chart Image
Cloud-Based Open Data Environment and Flow-based Aggregation Science Tool (CODEFAST), Phase I *(https://techport.nasa.gov/image/134140)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Geocent, LLC

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

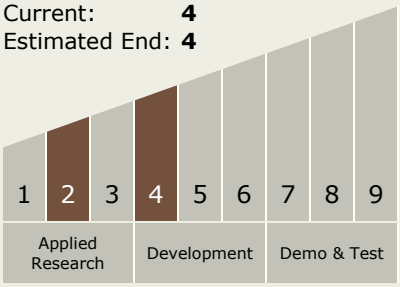
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Joshua M Penton

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.6 Ground Computing
    - TX11.6.8 Cloud Computing

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System